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Fig. 1

Royal jelly powder

↓

Washing with cooled acetone

├──── Centrifugation treatment (2,500 g × 30 minutes)

↓

Precipitate

↓

Washing with 80 % ethanol

├──── Centrifugation treatment (10,000 g × 20 minutes)

↓

Precipitate

↓

Extraction with 2 % NaCl

├──── Centrifugation treatment (10,000 g × 20 minutes)

↓

Supernatant

↓

Dialysis (MWCO: 500)

↓

Royal jelly peptide crude extract

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Fig.2

Retention time (minute)
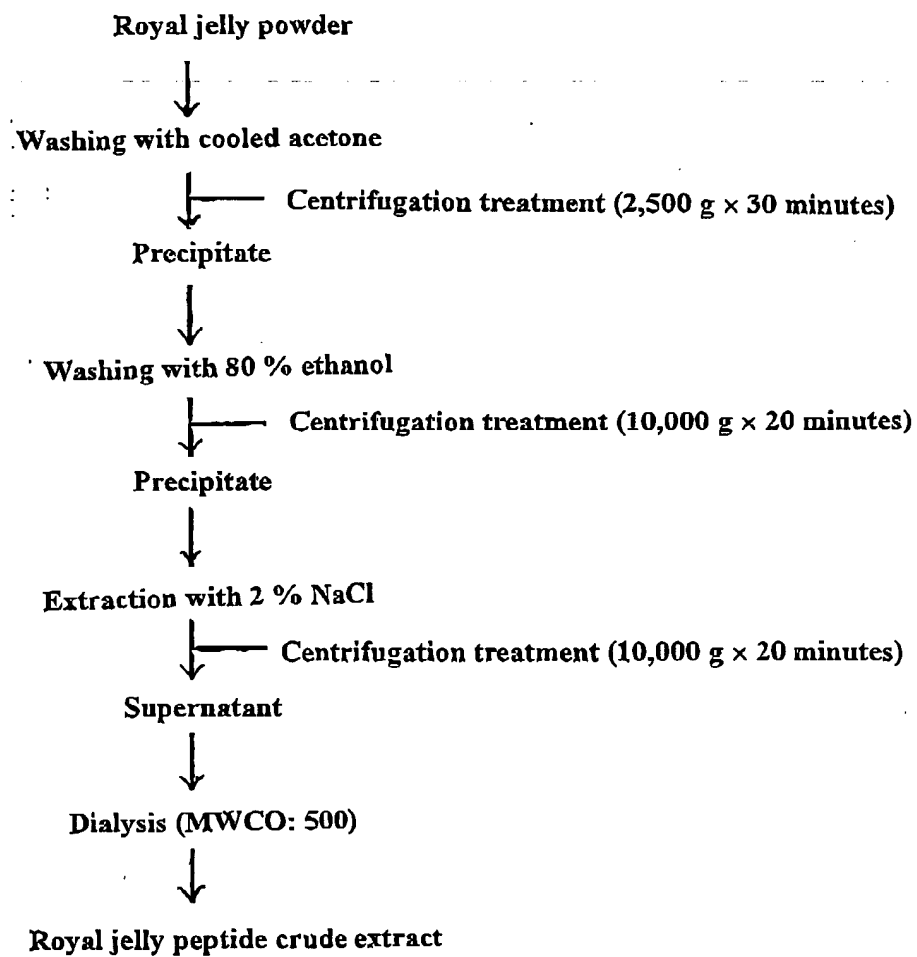
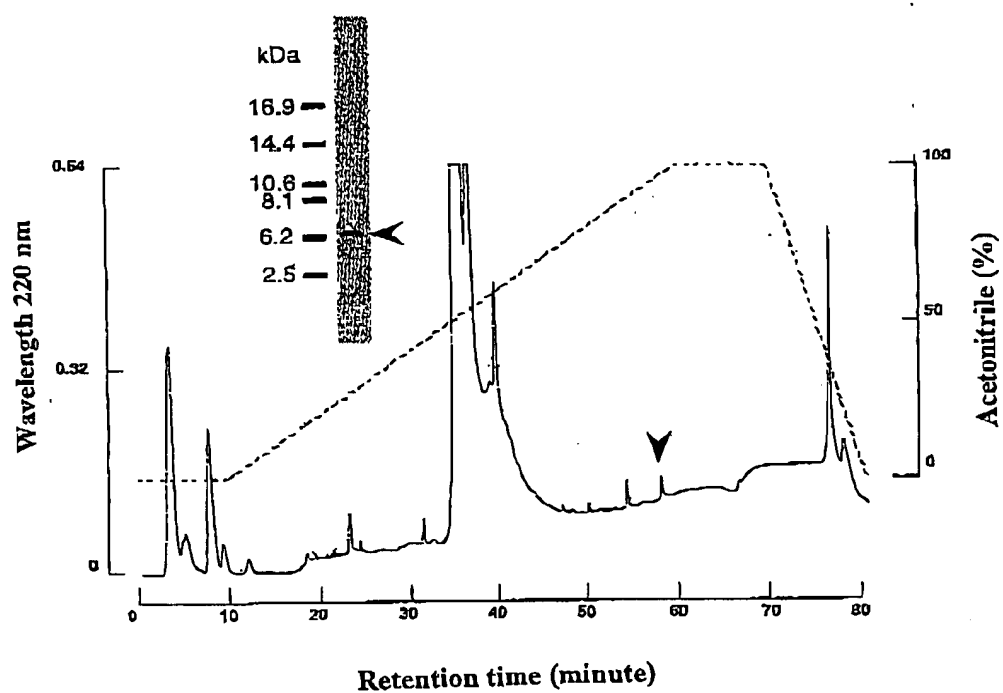3/10

Fig.3

```
     1           10              20              30
N-KTSISVKGES  NVDVVSQINS  LVSSIVSGAN
              40              50
   VSAVLLAQTL  VNILQIXIDA  NVFA •••••
```
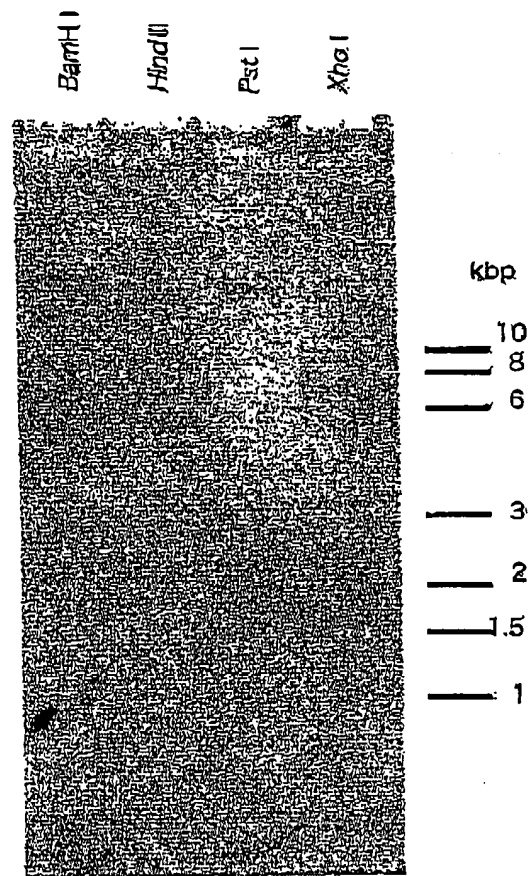
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Fig.4

```
1 ATCGAACCGAGCTTTCTAAAAGCAATTCCAAACAGCACAAAAATCAAA ATG AGC AAA   57
                                                          M   S   K  -22

 58 ATC GTT GCT GTC GTC GTC CTA GCT GCC TTC TGC GTA GCC ATG TTG   102
-21  I   V   A   V   V   V   L   A   A   F   C   V   A   M   L    -7

103 GTC AGC GAT GTG TCC GCC AAA ACA TCA ATC AGT GTC AAA GGC GAA   147
 -6  V   S   D   V   S   A   K   T   S   I   S   V   K   G   E     9
                            -1  +1

148 TCG AAC GTG GAT GTC GTT TCC CAA ATC AAC AGT TTG GTT TCA TCT   192
 10  S   N   V   D   V   V   S   Q   I   N   S   L   V   S   S    24

193 ATC GTG TCT GGT GCC AAC GTG TCA GCA GTA CTC CTA GCT CAA ACT   237
 25  I   V   S   G   A   N   V   S   A   V   L   L   A   Q   T    39

238 TTA GTT AAT ATC CTG CAA ATT CTT ATC GAC GCT AAT GTT TTC GCT   282
 40  L   V   N   I   L   Q   I   L   I   D   A   N   V   F   A    54

283 TAA TTTATATATTCTTTAGCTTTGTATTGCGCGCATACAACGCATTCGAATAAAGTAA   340
     *

341 TTAATAAAATTCAGAAAAAAAA                                        377
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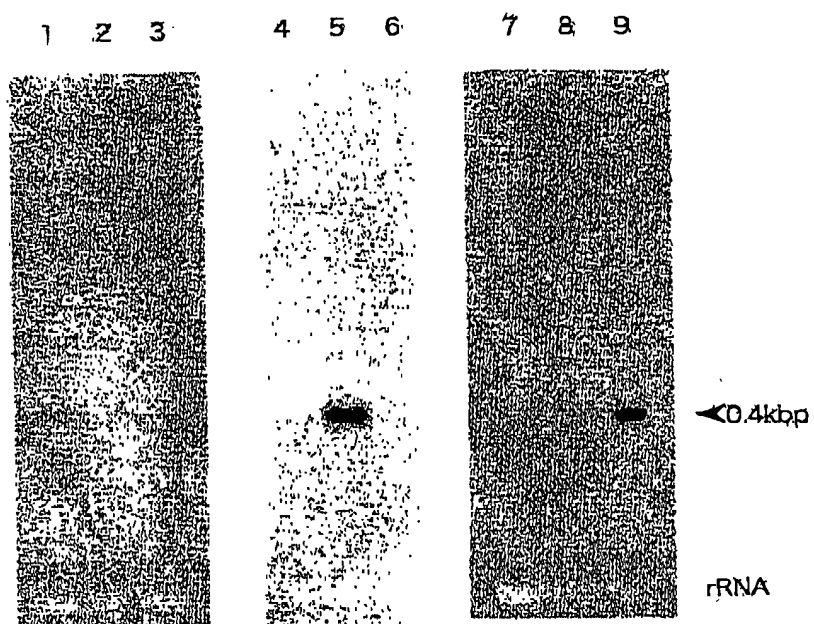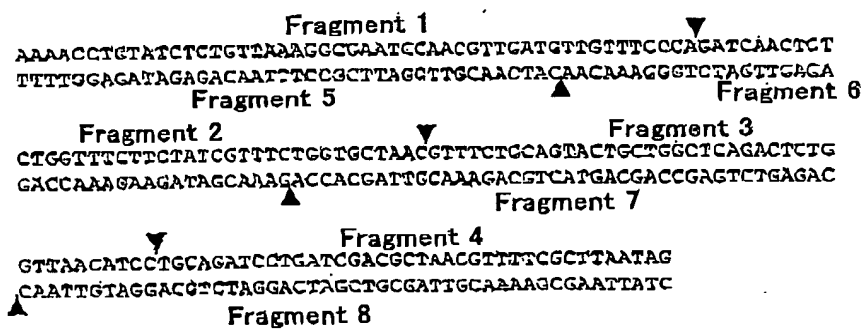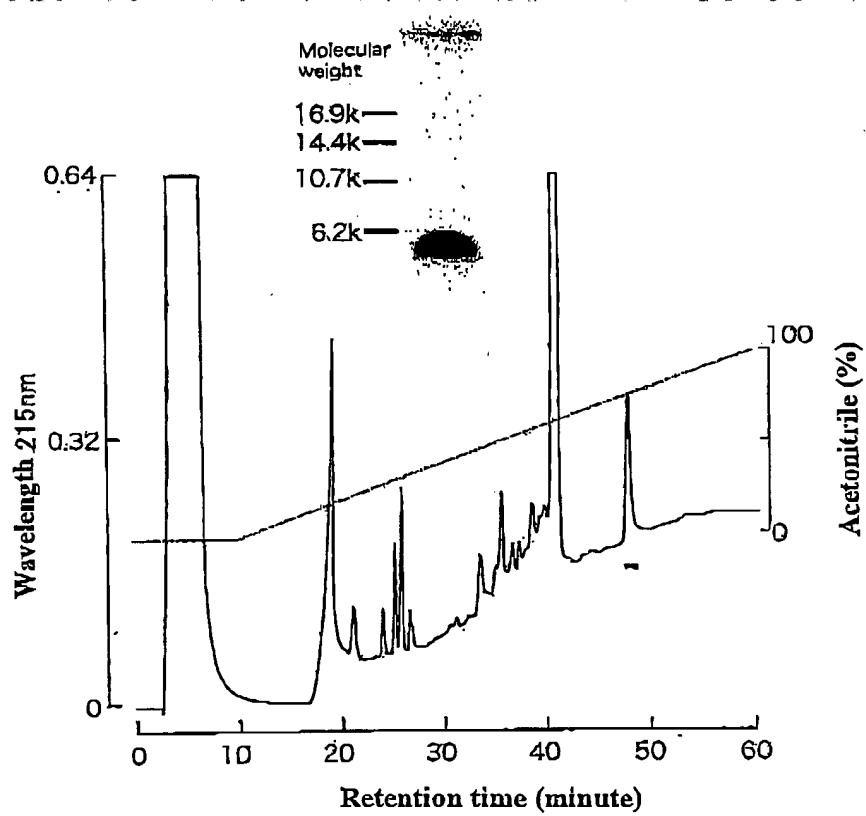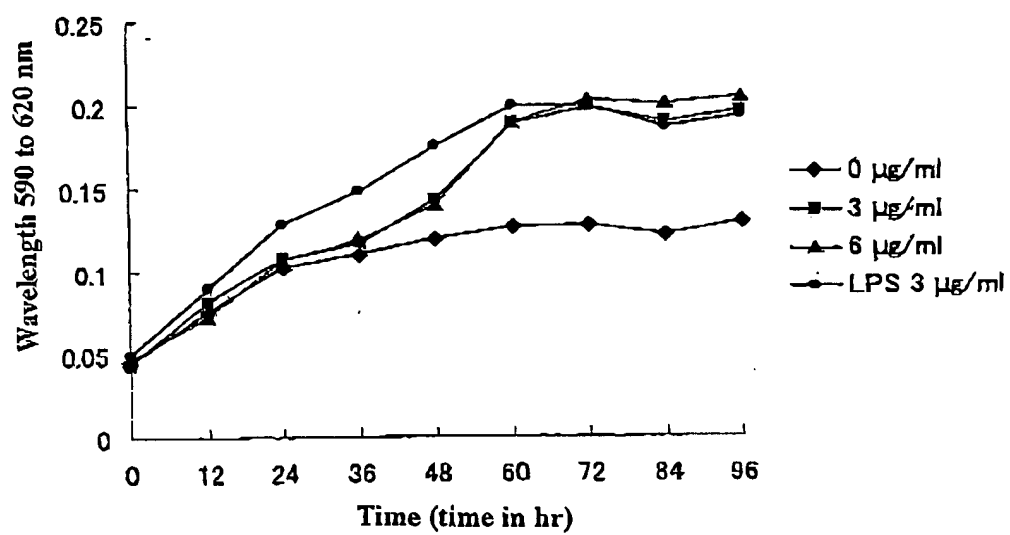
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Fig. 5

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Fig. 6

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Fig. 7

Fragment 1
AAAACCTGTATCTCTGTAAAGGCTAATCCAACGTTGATGTTGTTTCCCAGATCAACTCT
TTTTGGAGATAGAGACAATTTCCGCTTAGGTTGCAACTACAACAAAGGGTCTAGTTGAGA
　　　　　　Fragment 5　　　　　　　　　　　　　　　　　　　Fragment 6
　　Fragment 2　　　　　　　　　　　Fragment 3
CTGGTTTCTTCTATCGTTTCTGGTGCTAACGTTTCTGCAGTACTGCTGGCTCAGACTCTG
GACCAAAGAAGATAGCAAAGACCACGATTGCAAAGACGTCATGACGACCGAGTCTGAGAC
　　　　　　　　　　　　　　　　　　　　　　　Fragment 7
　　　　　　　　　　　　　　Fragment 4
GTTAACATCCTGCAGATCCTGATCGACGCTAACGTTTTCGCTTAATAG
CAATTGTAGGACGTCTAGGACTAGCTGCGATTGCAAAAGCGAATTATC
　　　　　　　Fragment 8

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Fig. 8

Retention time (minute)

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Fig.9

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Ｆｉｇ．１０

7 kDa

4 kDa